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Does the International Baccalaureate “work” as an alternative to mainstream schooling? Perceptions of university students in Hong Kong

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Abstract

Across East and Southeast Asia, the International Baccalaureate (IB) is expanding and diversifying. More students from affluent families are “opting out” of mainstream schooling to take the IB’s Diploma Programme (DP) in the private sector, which is marketed as a distinctive skill-based education that prepares students for university. This research investigated how DP alumni reflect on their educational experiences in developing cognitive and non-cognitive skills and as preparation for elite universities in Hong Kong. An online undergraduate survey (n=734) found that DP alumni self-perceived higher capacities than non-DP alumni in communication, creativity, critical thinking, cultural sensitivity, global-mindedness, leadership, and time management. In interviews (n=42), DP alumni discussed how their educational experiences “worked” in developing cognitive and non-cognitive skills. However, there were complexities as the DP alumni also perceived that students from mainstream schools were often better prepared for pedagogy and assessments in the context of higher education in Hong Kong.

Keywords: International Baccalaureate, university preparation, skills, academic adaptation, East Asia

Does the International Baccalaureate “work” as an alternative to mainstream schooling? Perceptions of university students in Hong Kong

Across East and Southeast Asia, the deregulation and marketisation of education systems have enabled an expansion of English-medium or bilingual private sector schools offering international programmes (Kim & Mobrand, 2019). The International Baccalaureate’s (IB) two-year Diploma Programme (DP) has been at the forefront of the expansion and has a growing reputation for an internationally-validated education that prepares students for universities worldwide. The IB is marketed as distinctive from mainstream schooling by building cognitive skills related to reasoning and thinking (e.g. creativity, critical thinking, problem-solving) and non-cognitive skills related to interpersonal and intrapersonal capacities (e.g. communication, leadership, time management) (Wright & Lee, 2014). Historically, the DP was offered by “traditional” international schools that serve the children of mobile expatriates. In recent years, however, the DP in East and Southeast Asia has diversified. A growing number of students from affluent local families are “opting out” of mainstream schools to take the DP in “traditional” international schools and “non-traditional” international schools or international divisions of high-tier public schools that primarily serve local populations (Bunnell, 2019; Hayden, 2016). As the identities of DP students have diversified, so too have their university destinations. Although DP alumni have tended to follow an educational pathway of universities in the West, an emerging group are entering universities in regional higher education systems such as Hong Kong (Lee, Leung, Wright, Yue, Gan, Kong & Li, 2014; Wright & Lee, 2019) and Japan (Sanders & Ishikura, 2018). Despite this trend, there is a lack of empirical research on how DP alumni reflect on their schooling in East Asian higher education contexts. The experiences of these students may differ from their counterparts in other regions given that East Asian higher education is a hybrid model that borrows from the West but retains its own academic values, traditions, and practices (Chan, 2017). Nonetheless, there is a limited understanding of whether DP alumni at universities in East Asia perceive that their education “worked” as an alternative to mainstream schooling. This mixed-method research gave a voice to DP alumni to reflect on their educational experiences in developing skills and as preparation for elite English-medium universities in Hong Kong. In phase one, an online survey compared the self-perceived capacities for cognitive and non-cognitive skills among DP and non-DP alumni. In phase two, semi-structured interviews explored the perceptions of DP alumni about how the DP contributed to building skills and the complexities of preparation for university in the context of higher education in Hong Kong.

The Context

Education systems in East and Southeast Asian societies rank among the world leaders in international assessments such as the Performance in International Standardised Assessment (PISA). High performance in reading literacy, mathematics, and science has attracted considerable interest from policymakers worldwide and attempts at the borrowing of “best practices” to replicate their success (You, 2019). Despite this, education in the region has often been criticised for a “high scores but low skills” (Liu & Neilson, 2011) phenomenon. There are widely held perceptions – especially in the West – that mainstream schooling is characterised by: “Standardized, narrow, and uniform educational experiences, high-stakes standardized testing, a push for conformity, and intolerance of exceptional talents” (Zhao, 2012 p. 33). It is important to note that such deficit perspectives have come under criticism for reflecting colonial discourses and racialised ideas of differences (Takayama, 2018) or for failing to recognise the direction of educational reform in the region (Adamson et al., 2017). Nonetheless, there is a rising social demand for English-medium or bilingual international programmes in the private sector from families who are dissatisfied or perceive constrained educational opportunities in mainstream schools (Young, 2018). At the same time, regional governments ranging from the former British colonies of Malaysia and Singapore to the post-socialist states of Mainland China and Vietnam to the democracies of Indonesia and South Korea have relaxed regulations on local student access to international programmes in expanding education markets (Kim & Mobrand, 2019).

Social demand and relaxed regulations have created the conditions for steady growth in DP schools. There were 373 schools offering the DP in East and Southeast Asia in January 2020, and the number of DP candidates in the region increased by 93 percent from 7,596 in May 2010 to 14,658 in May 2019 (see Table 1). The IB positions itself as distinctive from mainstream schooling in preparing students for university by fostering cognitive and non-cognitive skills alongside academic knowledge in traditional disciplines (Wright & Lee, 2014). The IB asserts that its programmes: “Aim to do more than other curricula by developing inquiring, knowledgeable and caring young people who are motivated to succeed” (IB 2020a). This is set out in a Learner Profile of attributes integrated into IB programmes that include, *balanced; caring; communicators; inquirers; knowledgeable; principled; open-minded; reflective; risk-takers; and thinkers* (IB, 2020b). In the DP curriculum, students take courses across six subject groups, including language and literature, language acquisition, individuals and societies, experimental sciences, mathematics, and the arts. Additionally, students complete three “core” courses that are designed to offer opportunities to develop Learner

Profile attributes: (1) Creativity, Activity, Service (CAS) that typically involves a community service project; (2) a Theory of Knowledge (TOK) course that is assessed by an oral presentation and essay; and (3) a 4,000-word Extended Essay based on an individual research project (IB, 2020c).

[Insert Table 1 about here]

Despite the expansion, the DP remains exclusive. Most DP schools in East and Southeast Asia (86%) operate in the private sector (IB, 2020d), and are attended by well-off expatriate families, traditional upper-middle-class families, and a “new rich” class.¹ Average tuition fees for private sector DP schools in selected cities for 2018/2019 included Beijing (US\$ 36,475), Shanghai (US\$ 34,547), Ho Chi Minh City (US\$ 27,163), Seoul (US\$ 27,128), Singapore (US\$ 25,387), Taipei (US\$ 23,213), Hong Kong (US\$ 22,231), Tokyo (US\$ 19,745), Bangkok (US\$ 19,162), Kuala Lumpur (US\$ 17,752), Jakarta (US\$ 17,635), and Manila (US\$ 16,217) (Wright & Lee, 2019, p. 3). The DP is also offered by high-tier public schools, often in international divisions that operate alongside mainstream schools. For example, there are nine schools in Hong Kong offering the DP under the Direct Subsidy Scheme that supplement government funding with private funding from tuition fees (IB, 2020d). Due to the exclusivity of DP schools, the IB has come under criticism as a new type of elite schooling that exacerbates inequality of educational opportunity (Gardner-McTaggart, 2016). Similar concerns have been raised in the United States about unequal access to DP schools for low-income and ethnic minority students (Perna et al., 2016). The argument is that by attending a DP school, affluent families can mobilise economic resources to secure advantages for their children in university admission and preparation over students in mainstream schools.

The Gap in the Literature

Research into the outcomes of DP alumni at university is limited and often anecdotal (Saxton & Hill, 2014). The literature demonstrates how stakeholders at DP schools typically perceive that the DP helps students to build cognitive and non-cognitive skills (Dickson et al., 2018) and enhances the readiness of students for university (Saavedra et al., 2016). Further

¹ The distinctive features of this “new rich” class from the traditional upper-middle-class are that they more often are proficient in English, accommodate western cultures, infuse western liberal ideas in their lifestyle, and demonstrate global mobility in work and leisure (cf. Koo, 2016; Wright & Lee, 2019).

research shows that nearly all DP alumni from schools in Mainland China go overseas for higher education and many attend globally leading universities (Lee & Wright, 2016), whereas DP alumni in the United States are more likely to attend four-year and selective universities compared to other students (Coca et al., 2012). At university, DP alumni will transition from an international high school programme to universities that primarily serve students from mainstream schools. In this respect, DP alumni may encounter similar challenges to those faced by international students in transitioning to an unfamiliar academic environment (e.g. Guo & Guo, 2017). However, the literature demonstrates that DP alumni adapt well to higher education in Western contexts. There is evidence that DP alumni are relatively high academic performers at universities in the United Kingdom (Higher Education Statistics Agency, 2016) and are more likely to graduate on time from universities in the United States (Bergeron, 2015). Also, Conley et al. (2014) found that DP alumni at university in the United States were academically-adjusted for the rigour of higher education. Similarly, Taylor and Porath (2006) identified how DP alumni in Canada felt well-prepared for university due to self-perceived strengths in critical thinking and time management. Lastly, Coates et al. (2007) found that university representatives in Australia and New Zealand perceived how the DP provided “better” university preparation than national curricula.

Nonetheless, the literature misses out on an in-depth understanding of how DP alumni reflect on university experiences in East Asian higher education contexts. This research gap is significant, given an emerging trend of DP alumni from schools in East and Southeast Asia attending East Asian universities (Lee et al., 2014; Sanders & Ishikura, 2018; Wright & Lee, 2019). Universities in East Asia have made considerable progress in quality and reputation in recent years as governments have invested heavily to establish “world-class” standards. As East Asian higher education is a hybrid model that combines Western and Eastern academic values, traditions, and practices (Chan et al., 2017), the university experiences of DP alumni may differ in substantial ways from their DP counterparts in Western contexts. What remains unknown is if DP alumni at East Asian universities perceive that their schooling “worked” in developing skills and if this contributed to successful preparation for university, or if DP alumni perceive limitations to their education compared to students from other educational backgrounds. With this in mind, the current research investigated the experiences of DP alumni studying at elite universities in Hong Kong. There were two guiding research questions:

1. How do DP alumni self-perceive capacities for cognitive and non-cognitive skills in relation to other students at elite universities in Hong Kong?

2. How do DP alumni reflect on their educational experiences as preparation for elite universities in Hong Kong?

Methodology

This mixed-method research combined (1) online survey data from DP alumni and non-DP alumni at University A (n = 734) with (2) and interview data from DP alumni at University A and University B (n = 42); a sequential qualitative-dominant design. The two universities are elite English-medium institutions based in Hong Kong. As a proxy for reputation, both universities are highly positioned in global university rankings.

Phase one: Online survey

Phase one used a self-ratings online survey to compare self-perceptions for a range of cognitive and non-cognitive skills between DP alumni and non-DP alumni at University A. Self-ratings do not capture external perspectives and may not accurately measure objective skills levels (see Johansson, 2018). Instead, the purpose was to compare how students from different educational backgrounds self-reflected on and self-perceived their personal capacities for multiple types of skills. Put differently, the survey sought to identify subjective differences in personal capacities for skills between DP alumni and non-DP alumni at university.

We first conducted a comprehensive literature review on the cognitive and non-cognitive skills considered most crucial in the 21st century. Often referred to “21st Century Skills”, these are skills that are deemed increasingly important to prepare young people for globalised and technologically-advanced societies (e.g. Ananiadou & Claro, 2009; Pellegrino & Hilton, 2013; World Economic Forum, 2015). The importance of cognitive and non-cognitive skills has been recognised in the higher education sector. Universities are under pressure to respond to charges from governments and businesses of a misalignment between learning experiences and the skills required in labour markets. In addition to the pursuit of academic mastery, the enhancement of employability by cultivating a broader range of skills is emerging as a core purpose of higher education (e.g. Kalfa & Taksa, 2015; Jayasingam et al., 2016; Sin et al., 2019). Based on the review, the commonly identified skills were: *adaptability; communication; creativity; critical thinking; cultural sensitivity; global-mindedness; leadership; persistence; problem-solving; teamwork; and time management.*

For the next step, we conducted a psychometric test of the instrument for measuring self-perceptions of “21st Century Skills”. The initial survey items were checked with 22 DP alumni at University B in Hong Kong. Given the small number of students, the objective was

to assess the content validity and reliability of the eleven domains of skills and response patterns. Then, we conducted a pilot test for convergent validity with data from a third university (n=89), which is also located in the Asia Pacific but is not the focus of this article. Based on this procedure, five questions were devised for participants to self-rate their capacities for each of the skills on a 5-point Likert-scale (see Appendix 1). The finalised survey was emailed to all undergraduates at University A. In total, 734 students completed the online survey out of an undergraduate population of 16,000, covering approximately 5 percent of the all undergraduate students at University A. While it is a small coverage of the whole population, the sample size (n=734) was sufficient to conduct an exploratory quantitative investigation. We further examined construct validity and cross-validation of the instrument (see Author, 2017 for details). In the cross-validation process, two domains (i.e. problem solving and teamwork) were excluded, given their relatively weak psychometric properties in terms of validity.

Of the 734 students at University A, 63 students were DP alumni. The proportion of the DP alumni participating in the online survey (8.5%) reflected the proportion of the DP alumni in the student population at the university (8.0%). The sample included students who attended DP schools in Hong Kong and students from DP schools overseas. Background characteristics from the participants are displayed in Appendix 2. First, the DP alumni were more international than other students. A higher proportion reported non-Hong Kong or dual citizenship (63.5%) and 59.7 percent had completed the DP at a school in Hong Kong, whereas 80.4 percent of non-DP alumni reported Hong Kong citizenship and 73.1 percent completed their schooling in Hong Kong. Second, the DP alumni were typically of higher socioeconomic status. Most had attended private sector schools (88.9%) and international schools (88.7%), compared with 23.4 percent and 7.6 percent of non-DP alumni. DP alumni also reported higher levels of parental educational attainment: 80.6% of their father's and 61.3% of their mother's held a bachelor's degree. The participants were recruited from disciplines in Social Science and Humanities (35.4%), Business and Management (14.6%), Science, Technology, Engineering, and Mathematics or STEM (45.3%), and other (4.7 %).

Given the substantial size of survey respondents from University A, we investigated whether there was a statistically significant difference in perceived capacities for cognitive and non-cognitive skills between DP and non-DP student groups. To this end, we conducted a multi-group latent mean analysis, a form of structural equation modelling. We chose a latent mean analysis approach over a series of t-tests or MANOVA because 1) the sample size sufficiently supports latent mean analysis, and 2) latent mean analysis has analytical advantages

over a series of t-tests, which may inflate Type-I errors, and MANOVA, which has limitations in detecting measurement errors (Cole et al., 1993; Hancock, 1997).

Phase two: Interviews

Phase two expanded on the online survey by generating an in-depth understanding of how DP educational experiences contributed to developing skills and preparing for university in the Hong Kong context. This involved semi-structured interviews lasting 45 minutes to one hour with 20 DP alumni at University A and 22 DP alumni at University B. The objective was to gather rich narratives that elaborated and offered illustrative examples to supplement the online survey. An interview protocol was constructed that explored reflections on DP schooling, self-perceptions of cognitive and non-cognitive skills, perceptions of differences between DP alumni and local students, and experiences of adapting to university.

The interviewees at University A were a subset of the online survey respondents who agreed to a follow-up interview. For University B, interviewees were recruited with support of university administrators via an email sent to all DP alumni. Half of the interviewees (52%) had completed the DP in Hong Kong. Most of the other interviewees were from DP schools across East and Southeast Asia, although a few were from Bangladesh, and Costa Rica, and Poland. The majority had attended private international schools (81%). Around three-fifths (62%) of interviewees were female. The interviewees were studying majors in STEM (43%), Business and Management (33%), Social Science and Humanities (19%), and others (2%). After verbatim transcriptions, thematic analysis drew out the underlying issues from the interview data. The researchers generated “codes” (labels assigned to features or “chunks” of data) that were integrated into broader “themes” (patterned responses or meanings) (Miles et al., 2013). Pseudonyms are used in reporting the findings.

Findings

Phase one: Survey findings

Descriptive statistics. The online survey asked 734 DP and non-DP alumni at University A to self-rate capacities in cognitive and non-cognitive skills. Among the participants, DP alumni self-reported higher ratings for all nine skills included in the analysis: *adaptability; critical thinking; creativity; communication; cultural sensitivity; global-mindedness; leadership; persistence; and time management.*

As demonstrated in Table 2, the respondents showed moderately positive views of their capacity for cognitive and non-cognitive skills across the nine dimensions (i.e., averages

ranging from 3.2 to 4.1). Notably, the averages of DP alumni were consistently higher than their non-DP counterparts on every skill dimension; the averages of DP alumni were higher by up to 0.3 points on every dimension than non-DP alumni.

[Insert Table 2 about here]

Latent mean analysis. We conducted multi-group latent mean analysis with the aim of identifying if the group differences in self-reported capacities for the nine skills were statistically significant. Preliminary tests uncovered no statistical group difference for persistence and adaptability. Following this, we examined group differences among the seven remaining skills. The data were tested for configural, metric, scalar, and factor variance/invariance, as a requirement for latent mean analysis. The latent mean model showed an acceptable level of model fit (Hu & Bentler, 1999): $\chi^2(1000) = 2266.9$, TLI = .908, CFI = .913, and RMSEA = .042 (see Table 3).

[Insert Table 3 about here]

Table 4 shows that DP alumni self-reported greater capacities for the seven skills in comparison with their non-DP counterparts. This included: cultural sensitivity (.404, $p < .001$), communication (.313, $p = .008$), global-mindedness (.277, $p = .002$), time management (.277, $p = .031$), creativity (.254, $p = .031$), critical thinking (.242, $p = .007$), and leadership (.190, $p = .023$). The Cohen's d effect sizes provide further support for the significant differences between DP and non-DP alumni. The greatest group differences were in cultural sensitivity, global-mindedness, and critical thinking.

[Insert Table 4 about here]

Phase two: Interview findings

Self-perceptions of skills. In the interviews, the DP alumni emphasised the high quality of their DP schooling. At a surface level, the DP had “worked” with regards to admission to a university that is highly positioned in global rankings. Also, almost half of the participants noted that they had received a course credit transfer and/or a scholarship upon entry to the universities. More deeply, they perceived the DP as a privileged educational experience in comparison to mainstream schooling. As Aiko reflected: “I feel IB students have this idea that

it's the best programme for university in the world" (University A, Social Science and Humanities). Building on the online survey findings, the DP alumni emphasised how their DP experiences contributed to self-perceived strengths in: *communication; creativity; critical thinking; cultural sensitivity; global-mindedness; leadership; and time management*.

Global-mindedness and cultural sensitivity. The interviewees discussed how the DP cultivated a greater awareness of global issues and a capacity to empathise with people from different cultural backgrounds. Lotte explained how the DP has a globally-oriented curriculum: "We used case studies from all over the world, so we really got a global perspective". Also, Hwan, an DP alumnus from an international school in Singapore, discussed how teaching English as part of his overseas CAS project helped him learn about the lives of "disadvantaged" children in a developing country:

CAS was a huge influence on me...It gives you new ideas and new perspectives, and it really gave me the confidence to say that I can help disadvantaged children in different places around the world (University B, STEM).

Critical thinking and creativity. The DP alumni were confident in their capacity to think critically and creatively. Many highlighted the TOK course in getting them to question: "Ways of knowing, how you arrive at truth, how you obtain knowledge" (Yang, Business and Management, University A). More generally, they perceived how DP assessments valued critical thinking and creativity. As Lucas, a DP alumnus from a private Hong Kong-based international school, described:

The IB is not just about regurgitating what you memorised or the facts you have learnt. It is more of an active way of processing information...You are meant to show your own thinking process and personal ideas, rather than just the facts (University A, Social Science and Humanities).

Communication. The DP alumni discussed self-perceived strengths in communication. Although most commented on the advantages of English-medium schooling, interactive teaching was believed to help students become skilled in classroom discussions and presentations. As Lucy, who graduated from a Direct Subsidy Scheme school in Hong Kong, reflected:

We've had lots of practice presenting in class. And where other students may tend to struggle in terms of expressing themselves clearly or precisely, IB students have an edge (University B, STEM).

Leadership. The interviewees reported how DP alumni often took leadership roles with group projects and student associations. It was often noted how leadership opportunities during CAS promoted a self-confidence to pursue leadership roles at university. Based on her experiences at a private school in Mainland China, Alice explained:

You got really experienced in what it's like to lead organisations. You got to learn how to manage events, how to do fund-raising, how to deal with promotion at a very young age. It really helped me with getting into managing my projects right now (University A, Social Science and Humanities).

Time management. The DP was characterised as a highly demanding programme. The interviewees discussed how the DP's continuous and diverse assessments necessitated time management skills. For example, Shazia discussed how she managed her time at a private international school in Indonesia:

You have to manage your time to finish all the assignments, then you have to start working on the Extended Essay. Then for the final year, we have to try to accomplish all the CAS requirements and finish the TOK essays, and also prepare for the final exams (University B, STEM).

Adapting to university. The DP alumni did not have it all their own way. Many of the interviewees discussed difficulties with adapting to university in the Hong Kong context. In some cases, their concerns could be expected in a normal transition from high school to university. As Lotte noted: "Every student needs to adapt when they come to university" (University A, STEM). Yet the interviewees perceived more substantive differences between their DP and universities experiences. It was often commented that students from mainstream schools: "Find the transition much easier than us" (Yan, University A, Other). Above all, there were perceived to be mismatches between a "student-centred" pedagogy and diverse assessment types in the DP and a more "teacher-centred" pedagogy and "examination-heavy" approach to assessments at the universities.

Teaching and learning. The DP alumni described a need to adapt to unfamiliar teaching and learning approaches. There was a perception that DP pedagogy was "student-centred" in terms of encouraging students to be actively engaged with their learning. Positive reflections on DP pedagogy may be intertwined with the advantages of attending private sector schools with ample resources and favourable teacher/student ratios. Still, the interviewees contrasted their DP experiences with a more "teacher-centred" pedagogy at university typified by

instructors delivering content with limited student input or interaction. There was a perception that: “The classes here are sort of one-way communication” (Jane, University A, Business and Management). The DP alumni also discussed how instructors less often gave space for student-led inquiry. For instance, Janice contrasted experiences at university with her private international school in South Korea:

At least for my programme, they just spoon-feed in the lectures, and then you just have to memorise all of it. Whereas, I think in the IB we were encouraged to do our own thinking and our own inquiries (University B, STEM).

Most DP alumni perceived that students from mainstream schools were more accustomed to “teacher-centred” approaches. By contrast, the interviewees often described feeling “awkward” if they were the only student to ask a question. Moreover, Jin, who attended a private international school in Costa Rica, felt that she was adapting to the learning culture of other students:

People just sit in complete silence, even when most of the class knows the answer... It sort of brushes onto you as well. Even if I know the answer, I will now find myself sort of being silent (Jin, University A, Business and Management).

The interviewees were often critical of approaches to teaching and learning at the universities. There was a perception that a “teacher-centred” approach limited opportunities for students to take an active role in their learning. As Ken, from a local private school in Hong Kong, summed up:

If you’re in a small tutorial and have ideas firing around the room, you can really learn a lot. But if the tutor asks a question and it turns out to be a rhetorical question, you just don’t learn in the same way (University A, Social Science and Humanities).

Assessments. The DP alumni discussed their adaptation to university assessments. They typically perceived advantages in essays that assess a capacity to: “Apply, examine, and evaluate” (Wai, University A, Social Science and Humanities), presentations that encourage students to: “Simplify complicated things and explain it” (Veronica, University B, Business and Management), and group projects that rely on: “Communication, interaction, and general people skills” (Prisha, University B, STEM). Based on experiences at a private international school in Vietnam, Sven noted that the DP prepares students for a broad range of assessments:

We do better in course where it's not centered on the last month, but it's more throughout the semester. Where we have report writing, essays, and reflections. I think IB students do a lot better in those types of courses (University A, Business and Management).

The interviewees described difficulties in adapting to what was perceived as a more conventional approach to assessments at the universities. It was reported that assessments were "examination-heavy", especially for students in STEM majors. Jason described how the weight given to examinations contrasted to experiences at a private international school in Hong Kong:

We're not accustomed to a very exam-based approach. The way the IB works is that even if you don't do very well in the exam, you still have lots of internal assessments to count towards your overall grade. But in my course, if you fail your exam, you just fail (University A, STEM).

The interviewees perceived that students from mainstream schools were often better prepared for university examinations. First, mainstream schooling was believed to provide more specialised knowledge of academic content, which contrasted to a wider variety of skills assessed in the DP. For example, a DP alumnus from a Hong Kong-based private international school called Raj described:

Sometimes you just don't have the content knowledge to match-up to the students over here, and if you're taking certain courses where you need to be really knowledgeable, you're going to suffer for sure (University B, Business and Management).

Second, students from mainstream schools were believed to have a higher capacity to recall information for examinations. Edwin, who attended a private international school in Hong Kong, explained:

A lot of the exams are heavily rote-learning based. Even if you don't understand it, if you memorise all the lecture note you can still probably get an A. I'm not really as strong as other students in that aspect. We always joke that the IB students will be found at the bottom of the performance list (University B, STEM).

In general, there was a perception that assessments were not well aligned with the IB's emphasis on developing a broad range of cognitive and non-cognitive skills. As Veronica, who graduated from a private international school in the Philippines, reflected:

I'm actually not so sure if [University B] really wants us to be all-rounded and to explore different things. I'm not sure that [University B] wants to really promote that. I think it's a very academic university. That's what I realised when I moved here. It's really just about studying, learning the content, and doing well in the assessments (University B, Business and Management).

Discussion: Did the International Baccalaureate “Work” for University in Hong Kong?

This mixed-method research investigated how alumni of the IB’s DP reflected on their educational experiences in developing cognitive and non-cognitive skills and as preparation for elite universities in Hong Kong. Most DP alumni were from affluent families and had completed the DP at private international schools in Hong Kong or across East and Southeast Asia. In phase one, an online survey found that DP alumni self-perceived higher capacities in seven skills in comparison to non-DP alumni students, including: *communication; creativity; critical thinking; cultural sensitivity; global-mindedness; leadership; and time management*. The academic identities of DP alumni may be partially derived from experiences independent of the IB. However, in interviews for phase two, DP alumni from high schools from a range of countries consistently emphasised how empowering approaches to pedagogy and assessments produced self-perceived strengths in these skills in comparison with their counterparts from mainstream schools.

The findings may be interpreted as the DP alumni internalising IB marketing strategies to promote its programme to families and schools. This was telling in a comment that: “We’re supposed to be more well-rounded” (Anne, University A, Social Science and Humanities), as this demonstrates an awareness of how the DP is “supposed” to be different in its emphasis on a broader range of skills. Nevertheless, the consistently positive reflections identified in the online survey and interviews suggest that the DP had a transformative impact on the students. A “buy-in” seemed to instil self-confidence about how the DP was a privileged educational experience that fostered strengths in cognitive and non-cognitive skills to supplement disciplinary knowledge. This is significant given that cognitive and non-cognitive skills are considered increasingly important to prepare young people for modern societies (e.g. Ananiadou & Claro, 2009; Pellegrino & Hilton, 2013; World Economic Forum, 2015) and to enhance the employability of graduates (e.g. Kalfa & Taksa, 2015; Jayasingam et al., 2016; Sin et al., 2019). The findings may imply that the DP “worked” as an alternative to mainstream schooling, especially when combined with the fact that these students had gained admission to an elite university often with scholarships and credit transfers. Put differently, the DP seemed

to work in terms of university admission and instilling self-confidence about capacities for cognitive and non-cognitive skills.

It could be expected to follow that DP alumni would perceive that their schooling enabled them to thrive in higher education. However, there were complexities as the interviewees discussed *mismatches* between the DP and their university experiences in Hong Kong. There was a perception that the universities did not enable DP alumni to showcase their strengths in cognitive and non-cognitive skills. Their sense of a superior IB education had been *disrupted* in the process of adapting to university in the Hong Kong context. The findings provide a more nuanced picture than previous studies showing highly positive reflections on the DP as preparation for university in Western contexts (Coates et al., 2007; Conley et al. 2014; Taylor & Porath, 2006). This builds on research on how East Asian higher education is a hybrid model that is influenced by the West but retains distinguishing characteristics (Chan et al., 2017). Specifically, the DP was considered to have certain disadvantages in comparison to students from mainstream schools who were perceived to be more accustomed to the academic environment at the universities. First, some DP alumni were frustrated by different pedagogical approaches. Fewer opportunities for student input or interaction was perceived to be in tension with the IB's "student-centred" approach and considered less conducive to learning. Second, some DP alumni lacked assuredness in assessments. The DP was deemed to assess a broad range of skills, whereas university assessments were described as more reliant on specialised knowledge and a capacity to memorise content for examinations.

The mismatches discussed by the DP alumni overlap with research investigating the challenges faced by international students in adapting to university in unfamiliar academic environments (e.g. Guo & Guo, 2017). The complexity of the current research is twofold. First, most research on international students has focused on the experiences of international students in Western higher education contexts. Studies focusing on the experiences of East Asian students have typically identified challenges in the academic adaptation to more interactive teaching approaches, an expectation for logical, critical, and divergent thinking, and assessments that emphasise argumentative essay writing (Heng, 2018). In many ways, the current research directly contrasted with such findings. The DP alumni at universities in Hong Kong more often perceived that challenges to academic adaptation related to less interaction in classrooms, more expectations to memorise content, and greater use of standardised examinations. Second, the participants were *not* all international students as around half had completed the DP in Hong Kong, and many shared a Chinese ethnic heritage with the local university students. This suggests that explanations for mismatches may stem from prior

educational experiences, rather than mismatches related to “culture shock” or socio-cultural differences with the host population (cf. Zhou et al. 2008).

To be clear, the argument is *not* that the DP or Hong Kong universities are deficient and should necessarily reform pedagogy or assessments. Instead, the findings illuminate the complexities arising from the expansion of IB as an alternative to mainstream schooling. A selling point of the IB is that its programmes prepare young people to thrive at university through an education that combines skills with discipline-specific knowledge. Many of the DP alumni in this research had internalised IB discourses about being: “The best programme for university in the world” (Aiko, University A, Social Science and Humanities). At the same time, it is not clear that a skill-based education will be equally effective in preparing students to succeed in all higher education contexts. The DP alumni in the current research were often frustrated by a gap between high expectations of university preparedness and challenges in adapting to elite universities in Hong Kong. The tension was explained by perceptions about how their strengths in skills developed during the DP were not fully recognised in pedagogy and assessment approaches, and how students from mainstream schools often seemed better adapted for the academic environment. Overall, this research suggests that despite their self-perceived capacities for cognitive and non-cognitive skills, the DP alumni began to question whether their educational experiences had provided “*the best*” preparation for university in Hong Kong.

Concluding Remarks

In expanding international school markets, more students from affluent families across East and Southeast Asia are taking the DP and other international high school programmes. Traditionally, most DP alumni in the region entered higher education in Western countries (Lee & Wright, 2016). Prior research demonstrates how families often consider admission to universities in the West as “easier”, higher education experiences more “creative and free and less straight-jacketed”, and how credentials are higher status and offer advantages upon return to home labour markets (Waters, 2015 p. 222). Yet there are counter-trends as more DP alumni are entering universities in East Asia (Lee et al., 2014; Sanders & Ishikura, 2018; Wright & Lee, 2019). In many respects, the DP alumni at the Hong Kong universities perceived that their schooling had “worked” as an alternative to mainstream schooling. On the one hand, the students had gained admission to elite universities, often with scholarships and credit-transfers. On the other hand, many of the students believed their DP education was distinctive from mainstream schooling, especially in building capacities for cognitive and non-cognitive skills.

However, the research findings also illustrated how DP alumni might not be “*destined for success*” in their educational pathways. There were complexities in perceptions of how the DP prepared students for university in the Hong Kong context. Above all, the DP alumni discussed how self-perceived strengths in skills were not fully recognised, whereas students from mainstream schools were considered better prepared for a more “teacher-centred” pedagogy and an “examination-heavy” approach to assessments at the universities. These findings provide a nuanced perspective on the educational advantages offered by exclusive DP schools and illuminate the relative merits of mainstream schooling as students prepare for higher education in Hong Kong. To build on our findings, we call for further studies on DP alumni: How do course instructors perceive the skills of DP alumni and other students? How does the academic attainment of DP alumni at university compare with other students? How do DP alumni at other universities adapt to higher education? Answers to these questions will be valuable in generating a fuller picture of the experiences, identities, and outcomes of alumni from DP schools as they expand and diversify across East and Southeast Asia.

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Table 1. *Expansion of the DP in East and Southeast Asia*

	DP schools, January 2020 ¹	Private DP schools, January 2020 ¹	DP candidates, May 2010 ²	DP candidates, May 2019 ³	DP students (% change)
<i>East Asia</i>					
Hong Kong	33	23	1,318	2,269	72%
Japan	49	41	425	569	34%
Macao	3	2	0	47	N/A
Mainland China	116	92	1,526	4,435	191%
Mongolia	3	3	17	39	129%
South Korea	11	11	273	582	113%
Taiwan	8	8	346	369	7%
<i>Southeast Asia</i>					
Brunei	2	2	49	66	35%
Cambodia	3	3	21	117	457%
Indonesia	43	43	826	1,495	81%
Laos	1	1	10	25	150%
Malaysia	20	15	709	774	9%
Myanmar	2	2	0	59	N/A
Philippines	19	19	400	735	84%
Singapore	27	24	744	1,544	108%
Thailand	20	20	784	1,043	33%
Vietnam	13	13	148	490	211%
Total	373	322	7,596	14,658	93%

¹IB (2020d), ²IB (2010), ³IB (2019).

Table 2. *Self-perceived capacities for skills (DP and non-DP alumni)*

Skill	DP alumni	Non-DP alumni
Critical Thinking	3.8	3.6
Creativity	3.4	3.2
Communication	3.8	3.5
Cultural Sensitivity	4.1	3.8
Time Management	3.9	3.6
Adaptability	3.8	3.7
Leadership	3.7	3.4
Persistence	3.8	3.7
Global-mindedness	3.8	3.5

Table 3. *Test for invariance between DP and non-DP alumni*

	<i>X</i> ²	<i>df</i>	TLI	CFI	RMSEA
Configural invariance (base model)	2221.7	948	.903	.913	.043
Metric invariance	2244.4	974	.906	.913	.042
Metric and scalar invariance	2283.2	1007	.908	.913	.042
Metric, scalar, and factor variance	2298.3	1014	.908	.921	.042

Table 4. *Latent mean comparison of self-rated capacities for skills*

	Estimate	S.E.	P	Effect Size
Cultural sensitivity	.404	.106	.001<	0.97
Critical thinking	.242	.089	.007	0.68
Global-mindedness	.277	.089	.002	0.68
Leadership	.190	.084	.023	0.54
Communication	.313	.118	.008	0.45
Time management	.277	.128	.031	0.39
Creatvitiy	.254	.118	.031	0.37

Appendix 1. *Survey questionnaire of cognitive and non-cognitive skills and Cronbach alphas*

Domain	Question Items	University A <i>n</i> = 734
Critical Thinking	I am good at analysing and evaluating information I often make logical connections between ideas I do not readily accept the viewpoints of others ^{a, b} I am good at detecting weaknesses in dominant theories and perspectives Critical thinking is one of my major strengths	.690 .767 ^a
Problem Solving ^b	I am good at solving real world problems I can often find solutions to complex problems I am good at overcoming barriers to find solutions I have lots of ideas about how to solve problems in society Problem solving is one of my major strengths	.854
Creativity	I am a creative person I am good at finding novel answers to old questions I often come up with original ideas I have a range of creative talents Creativity is one of my major strengths	.887
Communication	I am good at communicating clearly and effectively I am active in classroom discussions I can persuasively present my viewpoints to others I can convey complex ideas to non-experts Communication is one of my major strengths	.873
Teamwork ^b	I work effectively when collaborating with others I learn more effectively in teams rather than studying on my own I prefer to work in teams rather than independently I am good at listening to the views of others Teamwork is one of my major strengths	.860
Cultural Sensitivity	I can understand issues and events from a wide range of perspectives I have a strong knowledge of cultures other than my own I get along well with people from different backgrounds I respect the views of people from different backgrounds Cultural sensitivity is one of my major strengths	.827
Time Management	I am good at managing my time to meet deadlines	.899

Studies in Higher education (forthcoming)

	I very rarely miss deadlines I plan detailed schedules when working on a project or piece of work I manage my time so I do not need to rush to meet deadlines Time management is one of my major strengths	
Adaptability	I am effective in adapting to new situations If not succeeding I am good at changing my approach to solving a problem I often change my opinion in the face of new evidence I am good at adapting my working style in response to new tasks Adaptability is one of my major strengths	.837
Leadership	I am good at motivating other people I have strong leadership skills People listen and follow my instructions I am good at directing and supporting other people Leadership is one of my major strengths	.914
Persistence	I am good at persisting with my work in spite of difficulties I do not give up when I experience failure Once I start a task I do not give up until it is finished I am good at completing tasks that take a long period of time Persistence is one of my major strengths	.878
Global-mindedness	I am knowledgeable about current events from around the world I consider myself to be a global citizen I relate my studies to issues facing other people around the world I have a good understanding of the values of people in other parts of the world Global-mindedness is one of my major strengths	.890

Notes: ^a These are the improved Cronbach alphas after excluding the item; ^b These are the question items and corresponding constructs (coloured in grey) that were excluded in the finally validated instrument, given their relatively weak psychometric properties in terms of validity.

Appendix 2. *Background characteristics of online survey participants (University A)*

	DP alumni ¹	Non-DP alumni ²	Total ³
<i>Gender</i>			
Male	17.5	32.1	30.8
Female	82.5	67.9	69.2
<i>Citizenship</i>			
Hong Kong	49.2	80.4	77.7
Hong Kong dual citizenship	14.3	4.8	5.6
Other	36.5	14.8	16.7
<i>Country of DP school</i>			
Hong Kong	59.7	73.1	72.0
Other Asia Pacific	33.8	21.9	22.9
Rest of the world	6.4	5.1	5.3
<i>School characteristics</i>			
International school	88.7	7.6	14.5
Private fee-paying school	88.9	23.4	29.1
<i>Parents with a bachelor's degree</i>			
Father	80.6	41.8	45.2
Mother	61.3	33.6	36.0
<i>Degree programme</i>			
Arts, Social Science and Humanities	27.1	36.2	35.4
Business & management	25.4	13.6	14.6
STEM	46.1	45.2	45.3
Other	1.4	5.0	4.7

¹ n=63, ² n=671, ³ n=734.